WILDLIFE SURVEYS
MONO COUNTY LANDFILL
EXPANSION SITES

Prepared for.

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List of Acronyms & Abbreviations

AMSL	Above Mean Sea Level
CDF&G	California Department of Fish and Game
CNDDB	California Natural Diversity Database
ESA	Endangered Species Act
JBR	JBR Environmental Consultants, Inc.
LADWP	Los Angeles Department of Water and Power
LRWQCB	Lahontan Regional Water Quality Control Board
MDBM	Mount Diablo Base and Meridian
NRCS	Natural Resources Conservation Service
ppb	parts per billion
TEC/S	Threatened, Endangered, Candidate, and Sensitive Species
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compounds

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1.0 INTRODUCTION

Mono County is currently preparing environmental reports addressing the proposed expansion of two existing landfill sites. The Pumice Valley Landfill, the more northern of the two sites, is located southeast of Lee Vining, California, and south of Mono Lake. The southern site, the Benton Crossing Landfill, is located in Long Valley, north of Crowley Lake and Bishop, California. As a part of the analysis of the proposed expansions, Mono County asked JBR Environmental Consultants, Inc. (JBR) to survey the proposed landfill expansion sites for wildlife values and use by wildlife.

JBR conducted a terrestrial wildlife survey of the project area in October 2001. The survey was designed to identify terrestrial wildlife species, listed and candidate species, species of concern, and wildlife habitat which may be present in the proposed landfill expansion areas.

2.0 METHODOLOGY

JBR contacted the California Department of Fish and Game (CDF&G), California Natural Diversity Database (CNDDB), the U.S. Forest Service (USFS) and the U.S. Fish and Wildlife Service (USFWS) to gather background information about terrestrial wildlife species and habitats likely to be found in the proposed expansion areas. Map overlays depicting the location of recorded sensitive species occurrences were ordered from the CNDDB. These overlays and accompanying occurrence information was reviewed to identify any listed or sensitive species that had been recorded in each proposed landfill expansion area. A response to two queries forwarded to the USFWS had not been received by the time of this writing. Accordingly, JBR utilized information obtained from the CNDDB, USFS and CDF&G to compile a list of threatened, endangered, candidate and sensitive wildlife species which may occur in the project areas. Should additional information be obtained in response to JBR's queries to the USFWS, this report will be updated as appropriate.

A wildlife biologist from JBR then surveyed the two project areas on foot on October 25 and October 26, 2001. The JBR biologist walked the proposed expansion areas and assessed habitats present. General soil types and dominant vegetation in the expansion areas were noted. The biologist established and walked a series of transects. Wildlife and wildlife sign observed during

the field survey were noted. Survey efforts were concentrated in the undisturbed habitats surrounding each site, but habitats within each landfill area were also assessed. Prior to the site visits, conversation with Tim Taylor, Wildlife Biologist with the CDF&G for Mono County, had indicted that mule deer would probably make use of both sites to some degree. Deer sign, including tracks and pellets, were noted. The number and locations of fresh pellet groups was noted.

In addition to the expansion area, the interior of the Pumice Valley Landfill site was surveyed. This site was closed on the date of the initial visit, and no human activity was occurring at the site. Considerable activity was taking place at the time of the visit to the Benton Crossing site. Accordingly, the fenceline surrounding this site was walked and the interior and edges of the site were surveyed for wildlife and wildlife sign from the fenceline.

3.0 SETTING

3.1 PUMICE VALLEY LANDFILL

The existing Pumice Valley Landfill is located on a 40 acre parcel in NW¼ NW¼ Section 36, Township 1 North, Range 26 East (T1N, R26E), Mount Diablo Base and Meridian (MDBM). The proposed expansion includes a 330 foot wide strip east of the existing landfill, and a 100 foot wide strip around the remainder of the landfill. The total survey area is 53 acres in size. Elevation of the landfill is approximately 6,820 feet above mean sea level (amsl). The site is located in Pumice Valley approximately three miles south of Mono Lake. Rush Creek runs north toward Mono Lake approximately ¾ mile west of the survey area. Three undefined drainages run north from the northern edge of the existing landfill. Access to the site is via Dross Road, a paved road running northeast from California Highway 120. The project area lands are owned by and leased from the Los Angeles Department of Water and Power (LADWP).

According to the Natural Resources Conservation Service (NRCS), soils on the site are mapped as the Pits-dumps complex, 0-50 percent slopes on the site of the existing landfill and the Brantel gravelly coarse sand, 2 to 9 percent slopes on undisturbed ground surrounding the landfill. The pits and dumps complex is described as essentially barren, open excavations from which soil and commonly underlying material have been removed, exposing either rock or other material. The Brantel gravelly coarse sand occurs on valley floors and lake terraces. The soil is derived from volcanic ash from airfall, eolian and alluvial ash. Typical vegetation on this soil is basin big sagebrush (*Artemisia tridentata*), antelope bitterbrush (*Purshia tridentata*) and Indian ricegrass (*Oryzopsis hymenoides*).

Vegetation found during the site survey included a tall (five to six foot) big sagebrush-antelope bitterbrush community with a limited understory on lands surrounding the existing landfill. The landfill itself was largely barren, with less disturbed areas supporting Russian thistle (*Salsola kali*), nude buckwheat (*Eriogonum nudum*) and a small amount of big sagebrush.

3.2 BENTON CROSSING LANDFILL

The Benton Crossing site is a larger landfill located approximately 12.7 miles southeast of the Town of Mammoth Lakes. The site is located within a portion of Section 16, T3S R29E, MDBM. The existing Benton Crossing Landfill is 95 acres in size. Elevation of the landfill is approximately 6,900 feet amsl. The proposed additions would occupy 45 acres north of the existing site and five acres adjacent to the southwestern portion of the existing landfill (Figures 1 and 3). The site is located in Long Valley approximately two miles northwest of Crowley Lake. The landfill is located on a low ridge between alkali meadows north of Big Alkali Lakes to the west and the Owens River to the east. The Hot Creek-Little Hot Creek drainages join the Owens River north of the existing landfill. The low ridge on which the landfill is located forms a sagebrush-dominated peninsula extending to the north between the alkali meadows and Hot Creek drainages on the west and northwest, and the Owens River on the north and east. Access to the site is via Pit Road, a paved road extending north from Benton Crossing Road. Owens River Road, an improved gravel road, runs north of the currently active landfill. Project area lands are owned by and leased from the Los Angeles Department of Water and Power (LADWP).

According to the Natural Resources Conservation Service (NRCS), soils on the site are mapped as the Pits-dumps complex, 0-50 percent slopes on the site of the existing landfill; Haploduridic Xeric Torriorthents, 0 to 9 percent slopes northeast of the existing landfill; and Dechambeau gravelly sandy loam, dry, 0 to 2 percent slopes on lands surrounding the remainder of the landfill. The pits and dumps complex is described above, in the discussion of the Pumice Valley Landfill. The Haploduridic Xeric Torriorthents occurs on remnants of lake terraces and small mountain valleys. These soils are derived from ashy and mixed alluvium over stratified mixed lake sediment. Typical vegetation on this soil is basin big sagebrush, antelope bitterbrush, Indian ricegrass and western needlegrass (*Stipa occidentalis*). The Dechambeau gravelly sandy loam occurs on lakeshore terraces and alluvial fans. The soil is derived from alluvium from mixed rock sources, influenced by volcanic ash. Vegetation typically found on this soil is similar to that found on the Haploduridic Xeric Torriorthents.

Vegetation found during the site survey outside the boundaries of the existing landfill included a big sagebrush community with varying amounts of antelope bitterbrush. Bitterbrush plants showed varying degrees of hedging, with bitterbrush plants west of the existing landfill being heavily hedged. Both deer and cattle can hedge bitterbrush. Cattle are grazed in the area during the summer season

(Personal Communication, Evan Nikirk, P.E., Mono County Department of Public Works). Rubber rabbitbrush (*Chrysothamnus nauseosus*) dominated disturbed sites outside of the active landfill. The understory community in the area was limited.

Shrub height in the western and southwestern portions of the survey area averaged about three feet. In swales, drainage depressions and other areas of deeper soils, however, a much taller big sagebrush-dominated community was present. Shrub height in these areas averaged five to six feet. A portion of the area north of the existing landfill had burned in the past. Burned big sagebrush stumps were noted in this area, and the vegetation present was dominated by rubber rabbitbrush. More grasses were present in this formerly burned area. Active disturbance within the existing landfill had removed most vegetation. A large pile of stumps has been placed within the existing landfill boundary north of Owens River Road. This site is not fenced, and does not appear to be subject to current dumping.

4.0 WILDLIFE

4.1 PUMICE VALLEY LANDFILL

According to Mr. Tim Taylor of the CDF&G, mule deer (*Odocoileus hemionus*) of the Casa Diablo deer herd utilize the Pumice Valley area. Deer pass through the area during migration movements between summer range in the Sierra Nevada to the west and wintering areas to the southeast. The majority of this movement occurs to the south of the project area, but some deer pass through the general project area. Mr. Taylor noted that with the tall brush present in the area, some fawning can also be expected to occur locally. In addition to mule deer, a variety of small game and nongame species occur in the area. The greatest wildlife diversity is present during the spring and summer months, when neotropical migrant birds arrive to nest in the area. The following sections summarize the potential for big game, game birds, raptors, small game, and non-game species to occur within the project area. Appendix A shows photographs of the habitat present in the survey area.

4.1.1 BIG GAME

Mule deer are the principal game species found in the project area. As noted, while the project area is not on a major migration corridor, some migrating deer can be expected to pass through the project area. The tall big sagebrush and bitterbrush present in the area provides good hiding cover and represents fawning habitat for small numbers of deer. During the winter season, most deer move to winter range southeast of the project area.

The tracks of three to four individual deer were found within the proposed expansion area east of the existing landfill. A heavier concentration of tracks, left by three to four deer in one group, and by

what appeared to be three deer in a second group of tracks, were found leading south-southeast across the northeast corner of the survey area. A single set of tracks and fresh deer pellets were found in this same area. These tracks indicated deer were moving through the northeastern corner of the survey area toward the Mono Craters. The tracks of six to eight deer were found moving east and east-southeast across the northern end of the existing landfill. These deer had jumped the fence onto landfill property at the western-most drainage which begins at the north edge of the landfill. Several deer had jumped back over the fence, exiting the landfill, at the next drainage to the east (the central drainage north of the existing landfill). Others had moved into the dump area, but vehicle tracks obscured where these deer had exited the landfill.

4.1.2 Game Birds

Mr. Tim Taylor of the CDF&G stated evidence of sage grouse (*Centrocercus urophasianus*) had been recorded near a gravel pit approximately ½ mile west of the survey area. Mr. Taylor stated, however, that the tall vegetation in the survey area may limit use of the area by sage grouse. Sensitive species occurrence information obtained from the CNDDB did not include any records of sage grouse in the area. No evidence of sage grouse was noted during the field survey.

Mourning doves (*Zenaida macroura*) and California quail (*Callipepla californica*) may occur in the area, and nesting by either species is possible.

4.1.3 Raptors

No raptors were observed in or near the landfill during the October baseline surveys. According to the CNDDB, a northern goshawk territory which was active in the early 1980s was reported near Rush Creek approximately 1.5 miles north of the Pumice Valley Landfill. A Swainson's hawk nest is also reported from near the Sierra range front, approximately three miles southwest of the project area. These species are discussed further under Section 4.1.5, Threatened, Endangered, Candidate and Sensitive Wildlife, below.

Mr. Tim Taylor of the CDF&G stated the area represents golden eagle (*Aquila chrysaetos*) and prairie falcon (*Falco mexicanus*) foraging habitat. Red-tailed hawks (*Buteo jamaicensis*) and American kestrels (*Falco sparverius*) can also be expected to forage in the area. The tall brush present on much of the undisturbed portion of the survey area probably limits use of those areas as raptor foraging habitat.

Mr. Taylor also noted the project area represents potential short-eared owl (*Asio flammeus*) habitat. As described in Section 4.1.5, Threatened, Endangered, Candidate and Sensitive Wildlife, below, the tall shrub cover present on the undisturbed portions of the survey area does not represent potential burrowing owl habitat. The cleared area of the dump would represent potential burrowing

owl habitat, but the active disturbance on site would tend to dissuade burrowing owl use of the existing landfill.

4.1.4 Small Game and Non-Game

In part due to the timing of the surveys, few nongame species were observed in the survey area. The tracks of coyotes (*Canis latrans*) and fox (probably kit fox, *Vulpes macrotis*), as well as black-tailed jackrabbits (*Lepus californicus*) and cottontail rabbits (*Sylvilagus nuttallii*) were found in the area. Least chipmunks (*Eutamius minimus*) were observed within the grounds of the existing landfill. The tracks and burrows of other rodent species were also noted in the area. Bat species potentially present in the area are discussed in more detail in Section 4.1.5, Threatened, Endangered, Candidate and Sensitive Wildlife, below.

The only birds observed in the area during the surveys were horned larks (*Eremophila alpestris*), common ravens (*Corvus corax*), a single black-billed magpie (*Pica hudsonia*) and house finches (*Carpodacus mexicanus*). Species such as the western meadowlark (*Sturnella neglecta*), spotted towhee (*Pipilo maculatus*) and Brewer's sparrow (*Spizella breweri*) can be expected to nest in the big sagebrush-bitterbrush habitats of the project area. Brewer's blackbirds (*Euphagus cyanocephalus*), may also frequent the area. Winter residents can be expected to include the dark-eyed junco (*Junco hyemalis*) and white-crowned sparrow (*Zonotrichia leucophrys*).

No reptiles were observed during the October 2001 survey.

4.1.5 Threatened, Endangered, Candidate and Sensitive Wildlife

Information on the known occurrences of threatened, endangered, candidate, and sensitive (TEC/S) species was requested from the U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), the CNDDB, and conversation with personnel from the CDF&G.

The status of TEC/S species has been determined by the USFWS under the provisions of the Endangered Species Act (ESA) of 1973, as amended, and by other land and wildlife management agencies. Under the ESA, endangered species are defined as being in danger of extinction throughout all or a significant portion of their range. Threatened species are likely to become endangered in the foreseeable future. The USFWS also maintains a list of candidate species. Candidate species are those species or subspecies (taxa) for which the USFWS has sufficient information on biological vulnerability and threats to warrant listing as threatened or endangered, but is precluded from doing so by other listing activities of greater priority.

4.1.5.1 Listed Wildlife Species

In response to JBR's query, the CNDDB reported that the willow flycatcher (*Empidonax traillii*) nesting has been reported near the Sierra range front, over four miles west and southwest of the survey area. The southwestern willow flycatcher is listed as an endangered species by the USFWS and the CDF&G. Habitat for this species includes dense growths of willow and structurally similar vegetation. In California, willow flycatcher habitats are described as riparian woodlands along stream and river courses, in broad canyons and floodplains, around mountain meadows and moist mountainside springs and seepages with dense stands of willow three to eight feet tall. Habitat for this species does not occur in or near the Pumice Valley Landfill.

4.1.5.2 Sensitive Species

Mono County asked JBR to attempt to determine the presence or absence of animal species of concern within each survey area. JBR utilized information obtained from the CDF&G, CNDDB, and USFS to identify animal species of concern which may occur in the project areas. JBR requested information on sensitive species in the area from the USFWS, but no response to JBR's queries had been received at the time of this writing. Should additional information be obtained from the USFWS, this report will be amended accordingly.

Several bat species generally appear on Special Status Species Lists. These are the spotted bat (*Euderma maculatum*), pale Townsend's big-eared bat (*Plecotus townsendii pallescens*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), the fringed myotis (*Myotis thysanodes*) and the Yuma myotis (*Myotis yumanensis*). No caves, mines, outcrops or trees occur in the survey area. A single small building exists on the landfill site. Human activity at the existing landfill and the lack of potential roost sites in the area minimizes the likelihood bat roosting occurs on the Pumice Valley Landfill. The site may receive some use as foraging habitat, but expansion of the landfill is not expected to adversely affect bats in the area.

The landfill site and expansion area were searched for evidence of pygmy rabbits (*Brachylagus idahoensis*). This small rabbit occurs in stands of relatively dense and tall sagebrush (*Artemisia*), as well as some other shrub species. Pygmy rabbits utilize extensive burrow systems, largely of their own creation, with entrances at the base of sagebrush plants. Evidence of pygmy rabbits includes the presence of narrow trails in the understory grass community, often leading to burrows beneath shrubs, and the presence of small (three millimeter), often dark pellets. Pygmy rabbit burrows may be small (three-inch), simple, round burrows, but often include a trench at the burrow opening. JBR searched the proposed landfill expansion area for evidence of pygmy rabbits. No pigmy rabbits and no potential pygmy rabbit burrows or small pellets were found in the area.

As noted above, CNDDB data indicates a northern goshawk territory located near Rush Creek, approximately 1.5 miles north of the Pumice Valley Landfill, was active in the early 1980s. Goshawks typically nest in dense forest or in aspen groves, though foraging may occur over more open country. The landfill site does not represent goshawk nesting habitat, and offers limited potential as foraging habitat. Expansion of the landfill is not expected to impact northern goshawks.

The Swainson's hawk, a California listed Threatened species, has been reported nesting near the Sierra range front, approximately three miles southwest of the project area. Swainson's hawks generally prefer more open habitats as foraging areas. The birds may forage over the project area, but the tall brush present on lands surrounding the existing landfill would be expected to limit utilization of the proposed expansion area by Swainson's hawks.

As noted above, Mr. Tim Taylor of the CDF&G stated that evidence of sage grouse had been recorded near a gravel pit approximately ½ mile west of the survey area. Also as noted, however, Mr. Taylor felt the tall vegetation present in the survey area may limit use of the area by sage grouse. No evidence of sage grouse was noted during the field survey. Sage grouse may pass through or forage in the area, but the tall shrub habitat in the undisturbed portion of the survey area does not represent potential sage grouse strutting ground habitat.

Mr. Taylor also noted the area could support burrowing owls (*Athene cunicularia*). Burring owls generally inhabit open areas with low vegetation. The owls utilize underground burrows for nesting and shelter. Burrows average approximately eight by ten inches in diameter. Nesting areas characteristically include an elevated perch site or sites, such as fence posts, utility poles or mounds of earth. The burrowing owl is a migratory species in the northern portion of its range and a year-round resident in the south. In addition to direct observation, evidence of burrowing owl presence includes owl pellets (castings), extensive whitewashing about burrow entrances, prey remains, feathers, a collection of cow dung about the burrow entrance (burrowing owls are known to line the entrances to their burrows with pieces of cow dung, possibly to camouflage the odor of the nest), and tracks. The expansion area does not include the low, open habitat preferred by burrowing owls. Burrowing owls could utilize the open areas of the landfill, but this possibility seems unlikely due to human activity at the landfill. No evidence of burrowing owl occupancy was noted in the survey area.

Other sensitive bird species reported to occur near the project area include the yellow warbler (*Dendroica petechia*), a species which generally occurs in riparian habitat. The nearest occurrence record for this species reported by the CNDDB is over four miles northwest of the survey area. Habitat for this species does not occur in or near the proposed landfill expansion site. The California

gull (*Larus californicus*) nests on islands in Mono Lake. This species may forage at the landfill and would generally be beneficially affected by the landfill.

The Mono brine shrimp (*Artemia monica*) occurs in Mono Lake. According to Mono County, groundwater monitoring at the landfill has not detected the presence of toxic substances or movement of any such substances away from the landfill. Doug Feay, of the Lahontan Regional Water Quality Control Board (LRWQCB) noted the depth to groundwater at the Pumice Valley site is quite deep. Mr. Feay concurred that groundwater contamination was probably not an issue at the Pumice Valley site. Expansion of the landfill is not expected to affect this species.

4.1.5.3 Special Habitats

The CNDDB identifies areas of the Mono pumice flat special habitat approximately 0.7 mile to the south-southeast and three miles to the east of the survey area. Identified areas of Mono pumice flat to the south-southeast are south of Highway 120, and areas to the east are largely south of this roadway.

4.2 Benton Crossing Landfill

According to conversation with Mr. Tim Taylor of the CDF&G, mule deer (*Odocoileus hemionus*) of the Casa Diablo deer herd may pass through the area during migration movements between summer range in the Sierra Nevada to the west and wintering areas to the east. Mr. Taylor expected more limited deer use of the Benton Crossing site because of the generally lower vegetation present in the area. This vegetation offers less cover than at the Pumice Valley site.

In addition to mule deer, a variety of small game and nongame species occur in the area. As is the case with the Pumice Valley Landfill, the greatest wildlife diversity is present during the spring and summer months, when neotropical migrant birds arrive to nest in the area. Appendix A includes photographs of the habitat present in the survey area.

4.2.1 Big Game

As noted, vegetation in much of the survey area is lower than the tall vegetation present in the area of the Pumice Valley Landfill. Swales and other low areas, particularly in portions of the northern survey area, support a taller vegetation community, and deer sign was found concentrated in these areas. Fairly heavy deer sign, in the form of both tracks and pellet groups, was noted in areas of taller vegetation in the northern portion of the survey area.

Several sets of deer tracks were found in the area north of Owens River Road, which borders the northern edge of the currently active portion of the landfill. A total of 12 fresh (still shiny) pellet groups were found north of Owens River Road and west of a large pile of stumps which has been

deposited north of Owens River Road. Another 12 fresh pellet groups were found north of Owens River Road and east of the stump pile. Seven more fresh pellet groups were found east of the northern end of the dump, and south of Owens River Road. Older pellet groups and tracks were also common in these areas. The pellets and tracks were most commonly noted in areas of tall sagebrush. These taller stands of sagebrush generally occurred in swale bottoms and other low-lying areas north of the existing landfill. Few tracks or pellet groups were found in the more open habitats of an old wildfire burn north of the stump disposal area, or in areas of lower vegetation west and southwest of the active landfill. The deer appear to prefer the areas of taller cover.

As noted above, some bitterbrush plants near the Benton Crossing Landfill showed evidence of hedging. Bitterbrush was not common to the south or west of the existing landfill, but plants in this area were heavily hedged. Hedging indicates overuse by browsers, and can be caused by deer or cattle. Cattle graze the area during the summer season, and tracks were noted in the area during the October surveys.

4.2.2 GAME BIRDS

A single sage grouse pellet group was noted in the northwestern portion of the survey area. The number of droppings in sage grouse pellet groups left by roosting birds is a function of night length. This group contained 16 pellets, suggesting it was a "summer group." (Winter groups usually contain more than 20 pellets.) A single smaller game bird pellet group found in this area was probably left by a California quail. Sage grouse are discussed further under Section 4.2.5, Threatened, Endangered, Candidate and Sensitive Wildlife, below.

Mourning doves can be expected to occur in the area during the warmer times of the year, and may nest in the area.

4.2.3 RAPTORS

No raptors were observed in or near the landfill during the October, 2001 baseline surveys. No whitewash or stick nests were noted on a small outcrop located to the west of the alkali meadow west of the landfill.

Ms. Denise Racine, Wildlife Biologist with the CDF&G, stated that the Benton Crossing area represents important wintering habitat for both bald and golden eagles (*Aquila chrysaetos*). While no eagles were observed during the fall survey, the presence of water, including Crowley Lake approximately two miles to the southeast, would be expected to attract wintering bald eagles (see TEC/S species, below). The shrubland habitats surrounding the existing landfill represent potential foraging habitat for both species.

Other raptor species likely to occur in the general area include northern harriers (*Circus cyaneus*), red-tailed hawks (*Buteo jamaicensis*), and American kestrels (*Falco sparverius*). Rough-legged hawks (*Buteo lagopus*) may occur in the area during the winter season. Like the Pumice Valley site, the cleared area of the dump would represent potential burrowing owl habitat, but the active disturbance on site would dissuade burrowing owl use of the existing landfill.

4.2.4 Small Game and Non-Game

As at the Pumice Valley site, and again due in part to the timing of the surveys, few nongame species were observed in the survey area. The tracks of coyotes and fox (probably kit fox), as well as black-tailed jackrabbits (*Lepus californicus*) and cottontail rabbits (*Sylvilagus nuttallii*) were found in the area.

Birds observed in the area included numbers of common ravens and California gulls foraging at the dump. The area west of the existing dump was heavily tracked by ravens, and ravens were observed congregating in the alkali meadows west of the dump. California gulls observed in the area appeared to be traveling between the landfill and the Crowley Lake area. Numbers of Brewer's blackbirds and European starlings (*Sturnus vulgaris*) were also observed foraging in and near the landfill. Horned larks were observed both on the grounds of the existing landfill and in surrounding undisturbed habitats. Species such as the western meadowlark and Brewer's sparrow can be expected to nest in the big sagebrush-bitterbrush habitats of the project area. Winter residents can be expected to include the dark-eyed junco and white-crowned sparrow.

No reptiles were observed during the October 2001 survey.

4.2.5 Threatened, Endangered, Candidate and Sensitive Wildlife

Information on the known occurrences of threatened, endangered, candidate, and sensitive (TEC/S) species was requested from the U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), the CNDDB, and conversation with personnel from the CDF&G. As noted above, at the time of this writing, JBR had not received a response to two USFWS queries. Should additional information be obtained from the USFWS, this report will be amended accordingly.

4.2.5.1 Listed Wildlife Species

In response to JBR's query, the CDF&G reported that there is one occurrence of federally listed, proposed, or candidate species in the project area (personal communication, Denise Racine, CDF&G). The bald eagle, a federally listed threatened species, may occur in the area. As noted, Ms. Racine stated the area is utilized as foraging habitat by wintering bald eagles. Unless eagles foraged on some toxic substance at the landfill, expansion of the site is not expected to impact bald eagles.

4.2.5.2 Sensitive Species

Like the Pumice Valley Landfill site, no caves, mine shafts or adits were noted in the survey area. A small outcrop was noted west of the alkali meadow area west of the landfill. This outcrop and a collection of stumps placed in the northern portion of the landfill, north of gravel road passing north of the active landfill area (i.e., north of Owens River Road), could serve as roosting habitat for small numbers of bats. According to Mr. Evan Nikirk of the Mono County Department of Public Works, these stumps may be burned or buried as a part of the planned landfill expansion. Burning or burying the stumps should be conducted in the early spring or fall to avoid impacting hibernating bats or bat maternity sites.

As at the Pumice Valley site, the Benton Crossing Landfill area were searched for evidence of pygmy rabbits. No pygmy rabbit trails, burrows or small pellets were found in the area.

CNDDB records indicate that a sage grouse strutting ground (or lek) is located approximately 4.5 miles south of the project area, near Crowley Lake. Sage grouse congregate to display and mate on these leks during the spring season, then nest under shrub cover, often within two miles of the lek. Meadow and stream-side habitats represent important brood rearing habitats. During the winter season, sage grouse subsist almost entirely on sagebrush. As noted, a single sage grouse pellet group was found within the survey area, north of the existing landfill. Mr. Tim Taylor and Ms. Denise Racine of the CDF&G both noted other sage grouse leks are located near Crowley Lake. Ms. Racine noted the landfill attracts ravens, and stated that the CDF&G has expressed concern about the landfill's location within sage grouse habitat, and the resulting increased potential for raven predation on sage grouse nests and young.

No evidence of burrowing owls was noted in the vegetated areas surrounding the active landfill. The intensive use of the landfill would be expected to dissuade burrowing owl use of cleared ground within the active landfill.

CNDDB records indicate bank swallows occur near Crowley Lake, within approximately four miles to the south-southeast of the Benton Crossing Landfill. Bank swallows nest colonially in holes in vertical dirt banks. No areas of vertical bank were found in or near the survey area.

According to the CNDDB, three sensitive fish species occur in drainages which pass near the Benton Crossing Landfill. The Owen's tui chub (*Gila bicolor snyderi*) has been reported in Hot Creek and Little Hot Creek. Occurrences of this species have been reported within one mile of the Benton Valley landfill. The Owen's speckled dace (*Rhinicthys osculus* ssp 2) and the Owen's sucker (*Catostomus fumeiventris*) have been reported in the Hot Creek and Little Hot Creek drainages, as well as in the Owen's River. The Owen's speckled dace has also been recorded above Little Alkali

Lake. This dace has been reported within approximately 1.5 mile of the Benton Crossing Landfill. The Owen's sucker also occurs in Crowley Lake. This latter species has been recorded approximately 1.5 mile from the landfill site.

Lahontan cutthroat trout are reported in O'Harrel Canyon Creek, north of the Owens River and approximately 3.5 miles north of the landfill site.

The CNDDB also reports the travertine band-thigh diving beetle (*Hygrotis fontanalis*) occurs in a section of highly mineralized water in the outflow stream below Big and Little Alkali lakes, approximately one mile south of the survey area.

The Benton Crossing Landfill is not constructed on an impermeable liner, but several monitoring wells have been installed at the site. (Such a liner was not required at the time the landfill was constructed.) According to Mono County and the Lahontan Water Quality Control Board, groundwater monitoring at the landfill has detected the presence of very low concentrations (on the order of 1-2 parts per billion, ppb) of Freon and some other volatile organic compounds (VOCs) within the limits of the existing landfill (personal communication, Evan Nikirk, Mono County Public Works Department; Doug Feay, LRWQCB). Mr Feay noted shallow groundwater is present at the Benton Crossing site and that soils in the area include a high percentage of sand, gravel and boulders. These soils are, therefore, considered highly transmissive soils. The low rainfall that occurs in the area limits leaching, but heavy snow accumulations could result in off-site movement of mobile contaminants. Additional monitoring wells are being installed by Mono County and the LRWQCB is attempting to evaluate the potential extent of this potential contaminant movement. Investigations to date have not quantified the threat to surface waters near the site, or to sensitive species which may inhabit those waters. Although not proposed at this time, any lateral expansion of the landfill beyond its current permitted footprint would require the installation of a liner under new sections of the landfill. Mr. Nikirk noted groundwater in the area of the landfill is also naturally high in arsenic.

4.2.5.3 Special Habitats

The CNDDB information requested for this survey does not indicate any special habitats occur in the area of the Benton Crossing Landfill.

5.0 SUMMARY

5.1 PUMICE VALLEY

The area surrounding the Pumice Valley Landfill supports a tall big sagebrush-antelope bitterbrush community that offers good cover for deer. Light to moderate evidence of deer use was noted in the

area during the October survey. The heaviest sign was noted within the and just north of the northern portion of the landfill, and crossing the northeastern corner of the proposed expansion area. Evidence of use by coyotes, fox, lagomorphs, and small rodents, as well as a small number of nongame bird species, was also noted in the area.

No listed or sensitive wildlife species were observed in or near the Pumice Valley Landfill site. Evidence of sage grouse has been observed near the Pumice Valley Landfill, but the tall, dense sage present near the landfill may limit use of this site.

Water quality has not been identified as a concern at the Pumice Valley Landfill. The landfill is approximately 0.5 mile from the nearest surface water (Rush Creek), and does not appear to represent a threat to sensitive fish or aquatic invertebrate species in waters near the site.

5.2 BENTON CROSSING

Limited evidence of mule deer use was found to the west and southwest of the existing Benton Valley Landfill. Areas of taller big sagebrush and antelope bitterbrush habitat north of the existing landfill, however, showed evidence of fairly heavy deer use. The Benton Crossing site is located on a low ridge between alkali meadow habitats. Mule deer may forage in the meadow areas, and use the taller shrub habitats north of the Benton Crossing Landfill as hiding and resting cover. Alternately, or in addition, deer moving between seasonal use areas to the east and west may utilize the areas of taller shrubs as cover.

No listed or sensitive wildlife species were observed at the Benton Crossing Landfill site. The Benton Crossing site is reported to be within both bald and golden eagle wintering areas. The bald eagle is currently a federally listed threatened species.

A sage grouse pellet group was observed within the Benton Crossing survey area, and sage grouse leks exist near Crowley Lake. One of these leks is within approximately four miles of the Benton Crossing Landfill. The area appears to receive some use by sage grouse. The CDG&G notes the landfill attracts ravens, and has expressed concern about raven predation on sage grouse nests and young in the area of the landfill.

Potential groundwater quality issues have been identified as a concern at the Benton Crossing Landfill. The landfill is located approximately 0.15 mile from the nearest surface water potentially inhabited by a sensitive aquatic species. Investigations to date have not quantified the water quality concerns potential effect on sensitive fish or aquatic invertebrate species in waters near the site.

6.0 CONSULTATION AND COORDINATION

California Department of Fish and Game

Denise Racine	Wildlife Biologist, Bishop Office
Steve Parmenter	Fisheries Biologist, Bishop Office
Tim Taylor	Mono County Wildlife Biologist

Lahontan Regional Water Quality Control Board

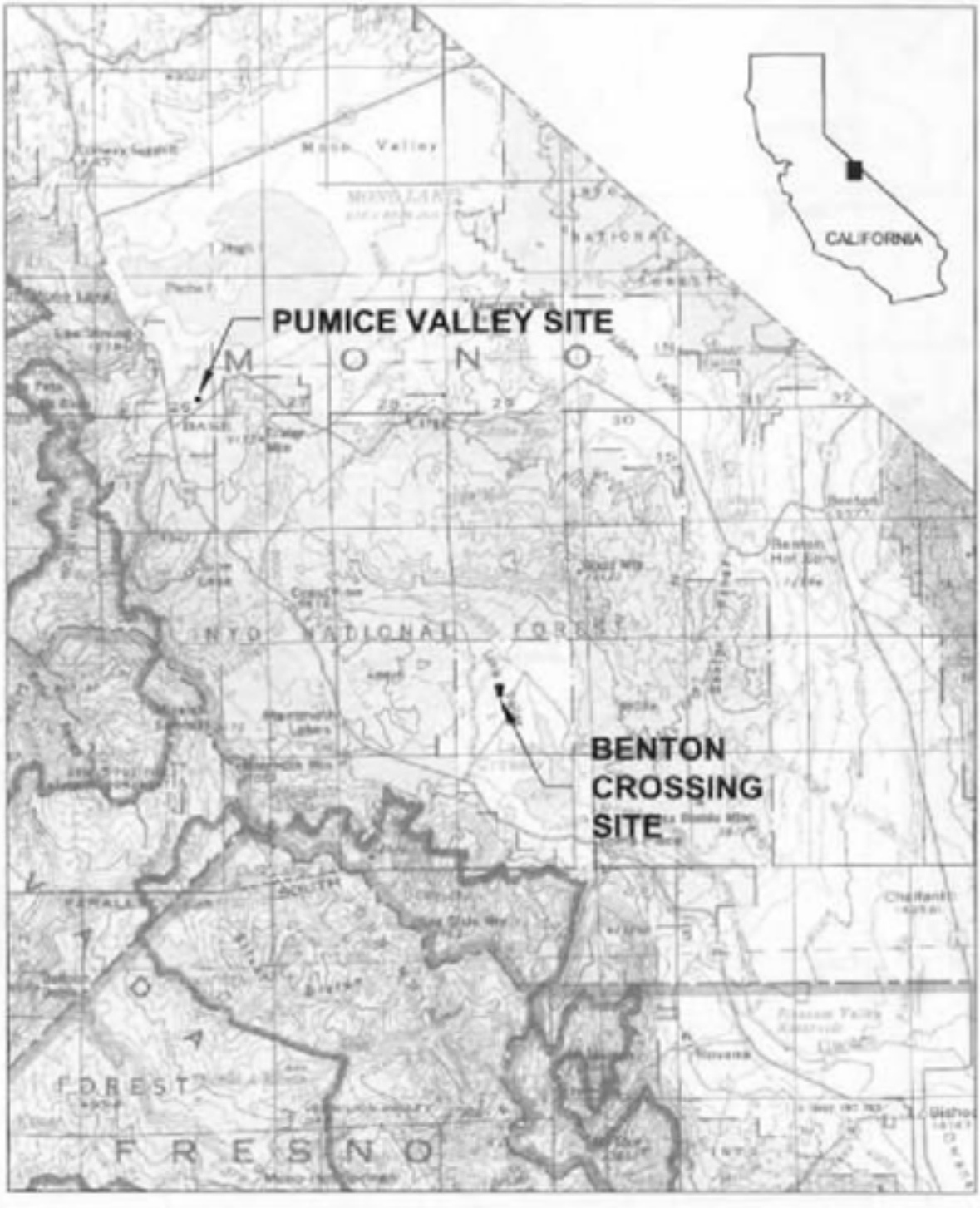
Doug Feay	Registered Engineering Geologist, Victorville Office

Mono County Department of Public Works

Evan Nikirk, P.E.	Assistant Director of Public Works

U.S. Forest Service

Rick Murray	Lands Assistant



BASE FROM USGS STATE OF CALIFORNIA, STATE MAP, NORTH HALF, 1:500,000, 1968 REVISED 1981

10 0 10 MILES

10 0 10 KILOMETERS

N

MONO COUNTY LANDFILL EXPANSION SITES

FIGURE 1
GENERAL LOCATION MAP

jbr environmental consultants, inc.

DESIGN BY: DW | DRAWN BY: CP | CHK'D BY: | SCALE: 1:500,000 | DATE DRAWN: 11/12/01 | REVISION

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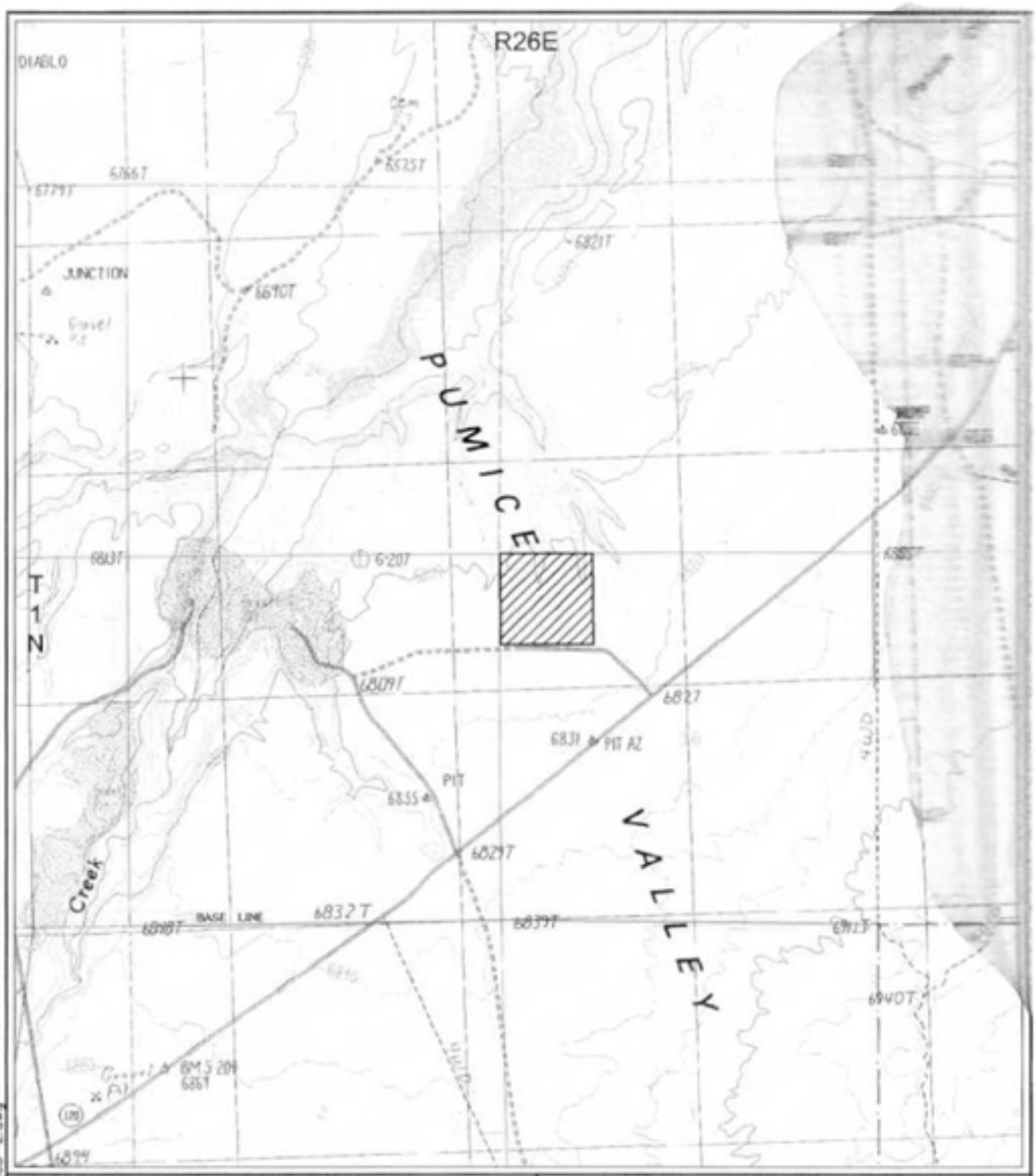

BASE FROM USGS 7.5' QUAD: LEE VINING, CALIFORNIA, PROVISIONAL EDITION 1986

2000 0 2000 FEET

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MONO COUNTY LANDFILL EXPANSION SITES

FIGURE 2
PUMICE VALLEY LANDFILL SITE

jbr environmental consultants, inc.

DESIGN BY DW | DRAWN BY CP | CH'D BY | SCALE 1"=2000' | DATE DRAWN 11/12/01 | REVISION

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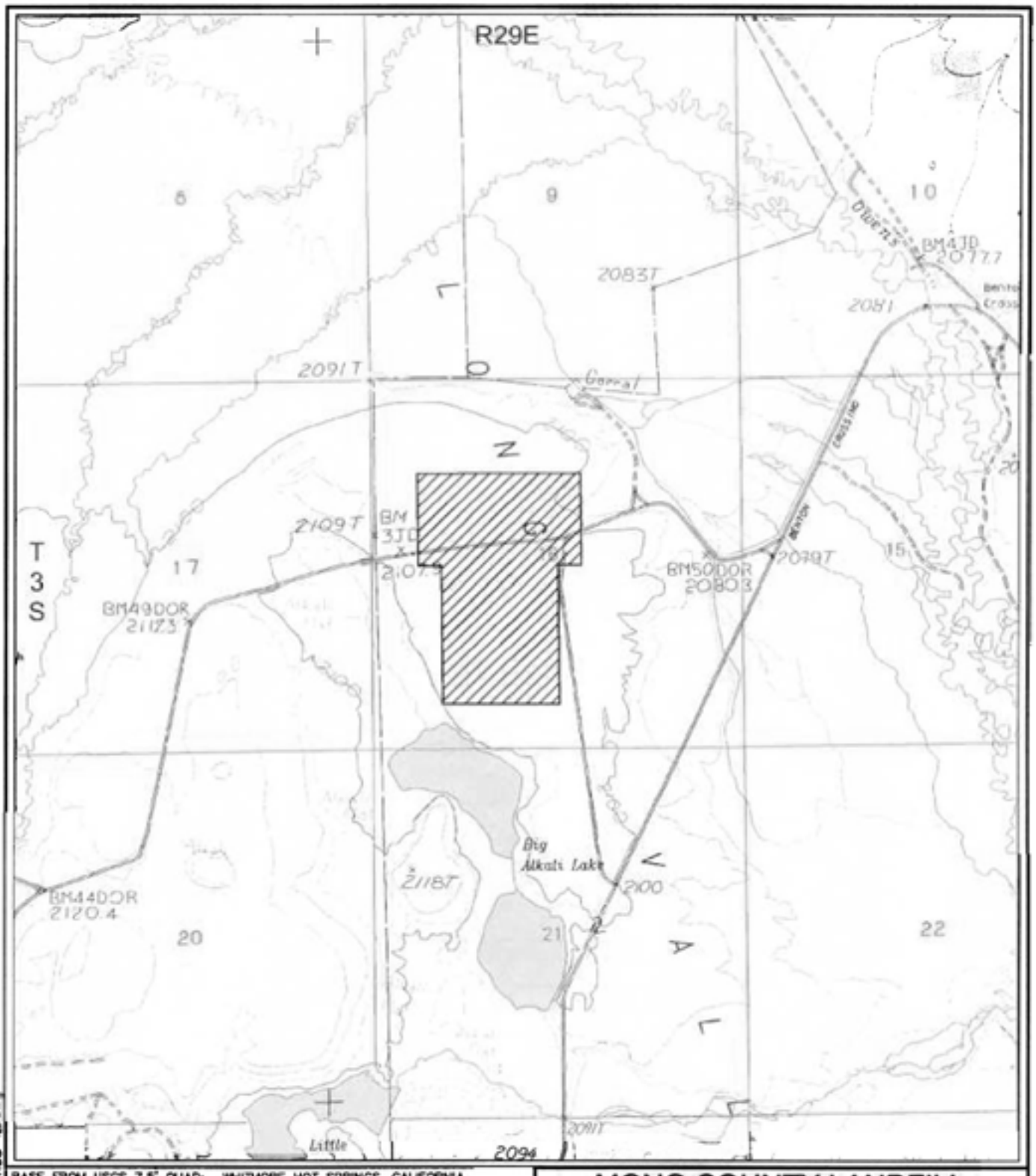

BASE FROM USGS 7.5' QUAD: WHITMORE HOT SPRINGS, CALIFORNIA, PROVISIONAL EDITION 1990

2000 0 2000 FEET

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MONO COUNTY LANDFILL EXPANSION SITES

FIGURE 3
BENTON CROSSING LANDFILL SITE

jbr environmental consultants, inc.

DESIGN BY DW | DRAWN BY CP | CHK'D BY | SCALE 1"=2000'

DATE DRAWN 11/12/01

REVISION

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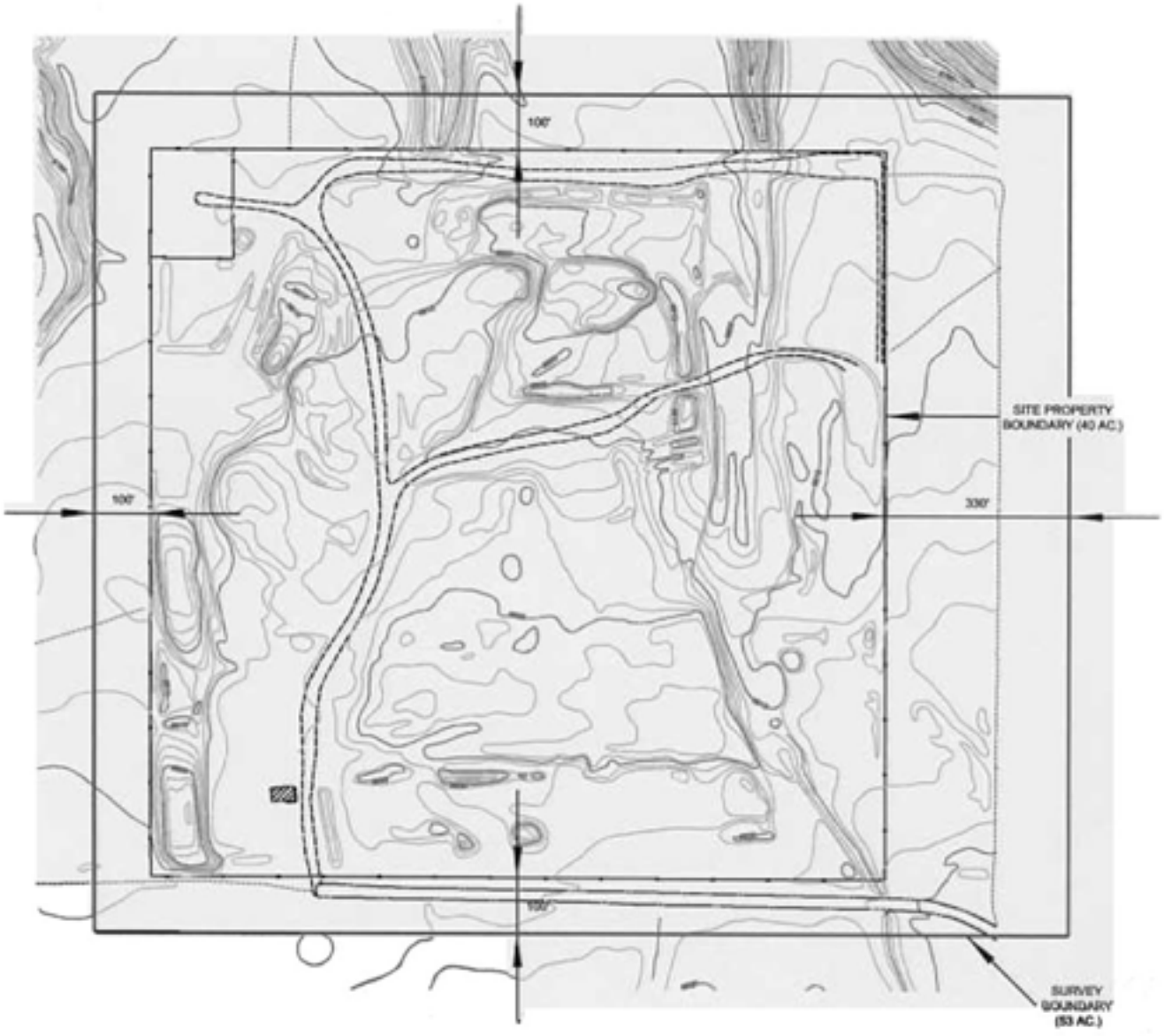

Drawing from Mono County Public Works, PVFieldSurveyBdry.dwg

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MONO COUNTY LANDFILL EXPANSION SITES

FIGURE 4
PUMICE VALLEY LANDFILL

jbr environmental consultants, inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	REVISION
MCPW	MCPW	1"=300'	11/27/01	

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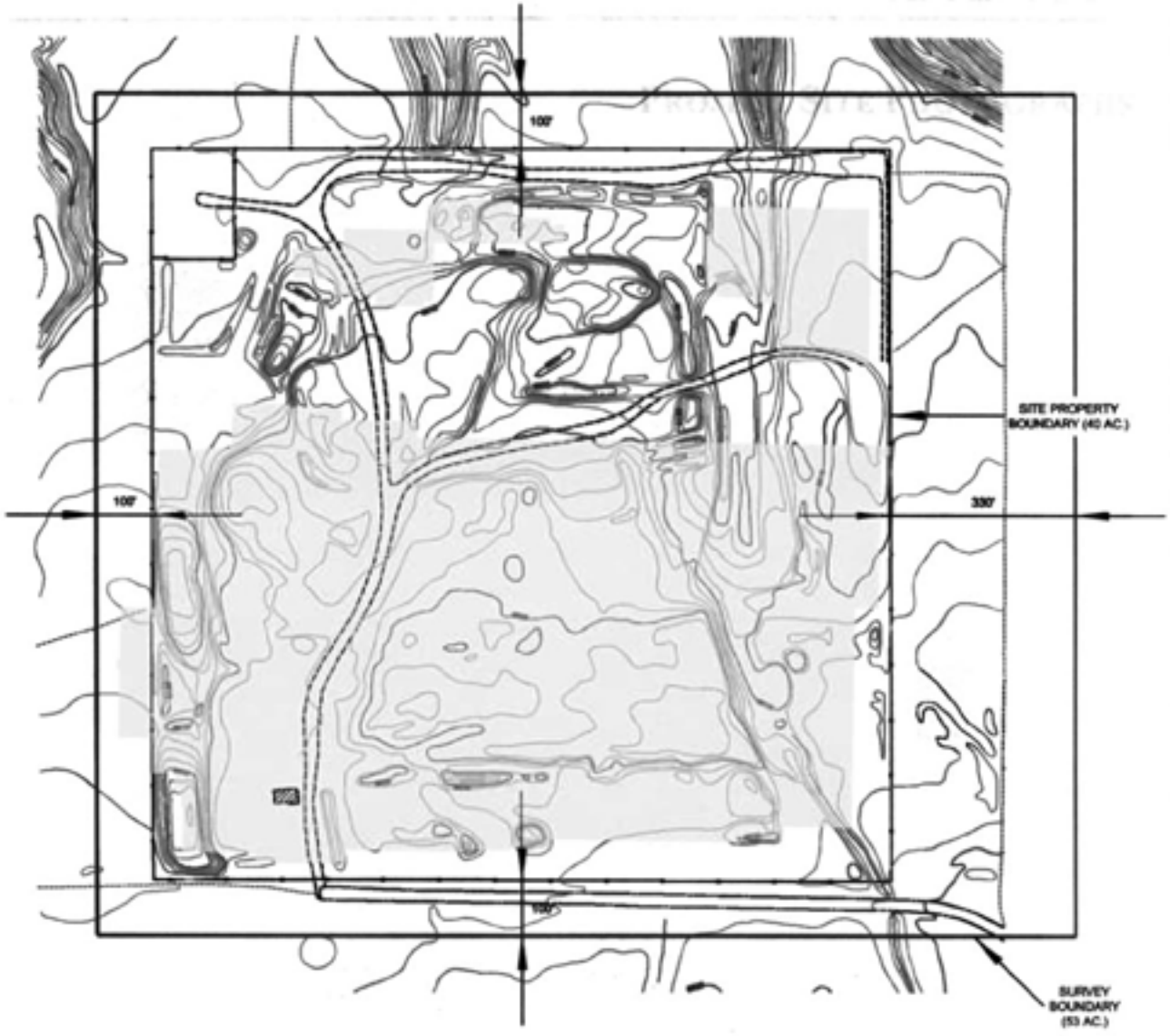

Drawing from Mono County Public Works, PVFieldSurveyBdry.dwg

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MONO COUNTY LANDFILL EXPANSION SITES

FIGURE 4
PUMICE VALLEY LANDFILL

jbr environmental consultants, inc.

DESIGN BY	DRAWN BY	SCALE	DATE DRAWN	REVISION
MCPW	MCPW	1"=300'	11/27/01	

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